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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,096	09/29/2003	Mark Elkovitch	134445-1	2165
23413	7590	06/06/2006		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002				
EXAMINER				
SANDERS, KRIELLION ANTIONETTE				
ART UNIT		PAPER NUMBER		

1714

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/674,096

Applicant(s)

ELKOVITCH ET AL.

Examiner

Kriellion A. Sanders

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 23-48, 50 and 51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1- 22 and 49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I, claims 1-22 and 49 in the reply filed on 9/30/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. This application contains claim 23-48, 50 and 51 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-22 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smalley et al, US Patent No. 6936233 in view of Narayan et al, US 2003/0213939 and Ameraseka et al, US 2002/0183438.
3. Smalley et al 6936233 discloses that single-wall carbon nanotubes produced by the arc discharge process or a process involving laser vaporization of a graphite substrate often comprise

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amorphous carbon impurities from the manufacturing process. Smalley et al is directed to a method for purifying a mixture comprising single-wall carbon nanotubes having amorphous carbon contaminates therein. The method includes the steps of heating the mixture under oxidizing conditions sufficient to remove the amorphous carbon, followed by recovering a product comprising at least about 80% by weight of single-wall carbon nanotubes. The nanotubes have a diameter ranging from 0.6 to 10 nm and may be formed into ropes. The nanotubes of the invention may be used to formulate composites based on thermoplastic and/or thermoset resins. The nanotubes may be mixed with or without solvent into the precursors of the polymers to form the polymeric composites. See col. 2 lines 11-24, col. 4, lines 21-24, col. 6, lines 13-18, col. 38, lines 1-22 and col. 39, lines 58-65.

4. Narayan et al discloses electrically conductive compositions comprising polymeric foam, carbon nanotubes and optional fillers. The polymers used may be thermoplastic or thermosetting resins. The carbon nanotubes may be single walled and have a diameter of 0.5 to 3 nm. The carbon nanotubes may contain impurities up to 80 wt % of the total amount of nanotubes. Additional conductive fillers may be used in the invention. See paragraphs 0008, 009, 0013, 0014, 0016, 0017, 0021.

Ameraseka et al, US 2002/0183438 discloses conductive polymeric composition comprising:

Either of a thermoplastic and/or thermoset resin and

An electrically conductive filler system further comprising:

small carbon fibers and

carbon powder and/or non-conductive filler

The small carbon fibers may be carbon nanotubes having a diameter of 2000 nanometers or may be graphitized carbon fibers. The carbon nanotubes correspond to the single walled nanotubes of applicant's claims. The carbon fibers have aspect ratios greater than or equal to 5. The small carbon fibers may be used with conductive carbon black powder. The carbon black is used in an amount that is greater than 0.25% of the total composition. See paragraphs 0015 and 0019.

It is clear that the combined use of carbon nanotubes and conductive fillers in polymeric or prepolymer compositions is well known in the art. Applicant's claims are therefore obvious in view of the references.

#### ***Response to Arguments***

Applicant's arguments filed 3/15/06 have been fully considered but they are not persuasive. Applicant argues that the references that have been relied upon do not teach the use of an organic polymer precursor and therefor do not teach all elements of applicant's claimed invention. This argument has not been found to be persuasive because Smalley teaches at col. 39, lines 58-65 that the carbon nanotube structural constituent may be uniformly mixed with a matrix material precursor (polymer solution, pre-fired ceramic particles or the like) and then converted to a composite by conventional techniques. Structural layers or components (e.g., felts or bucky paper) can also be preformed from the carbon nanotube materials and impregnated with a prepolymer solution to form the composite.

#### ***Information Disclosure Statement***

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Prior art cited on form 1449 must include a month and year of publication to be printed on the face of the patent once issued.

***Conclusion***

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kriellion A. Sanders  
Primary Examiner  
Art Unit 1714

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